FETC SUCCESS
U.S. Department of Energy
Federal Energy Technology Center

CLEAN AFFORDABLE
FUELS

- [x] fossil energy
- [ ] environmental
- [ ] energy efficiency
- [ ] other

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Slant Hole Drilling

States Impacted:
Colorado, but can be expanded to other regions where similar geology and gas reservoirs exist.

Benefit Areas:
Gas Production, Gas Reserves, Federal/State Revenues

Participants:
CER Corporation

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Description

Slant hole drilling is widely and successfully used to recover oil and gas that might not otherwise be recoverable. The project was initiated in 1990 to develop advanced drilling technologies that could recover gas from low-permeability, mixed-geology formations in the Greater Green River Basin of Colorado. Producers use slant hole or directional drilling to tap more of a gas-producing formation than conventional vertical wells. The well is drilled at a slant to a desired formation and then horizontally in the desired formation.

Goals

The goal is to evaluate and demonstrate the effectiveness of slant hole drilling in low-permeability gas reservoirs in western Colorado.

Tangible Benefits

National: This technology is part of a suite of advanced technologies and projects under DOE sponsorship that are helping ensure an adequate supply of domestic natural gas. Tests have shown that slant hole drilling is commercially viable in tight gas reservoirs, since the added drilling expense is more than offset by the resulting production. Recent tests on slant hole wells showed production of over 150 million cubic feet (MMcf) of natural gas during five months, including 5 weeks at a steady rate of 3 MMcf per day (MMcf/d). A gas deliverability test predicted an “absolute open flow potential” of 19 MMcf/d. The Potential Gas Committee estimated 22 trillion cubic feet (Tcf) of recoverable gas in the Greater Green River Basin if this advanced technology is used.

Regional: CER’s highly productive #1-SCHT well in Western Colorado was given the prestigious, industry-sponsored “Best New Well” award at the 1993 “Best of the Rockies” competition. Barrett Resources, a Denver independent producer, and Meridian Oil Company, active in the Piceance Basin have responded to this exciting news by drilling their own horizontal wells in the Cozzette sand on acreage adjacent to the DOE slant hole test site.